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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/907,227	07/17/2001	Shunsuke Kakisaka	10873.762US01	6315

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EXAMINER

LEURIG, SHARLENE L

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 08/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/907,227

Applicant(s)

KAKISAKA ET AL.

Examiner

Sharlene Leurig

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-8, 10 and 12-19 is/are rejected.
- 7) ☒ Claim(s) 5, 9, 11 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. The amendment filed on June 12, 2003 has been entered and acknowledged by the Examiner. Claim 1 has been amended and claim 4 has been cancelled.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on June 12, 2003 is being considered by the examiner. Copies of Japanese publications JP 3-121653 and JP 4-14356 have been received.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 6-8, 10, 14 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gleixner et al. (5,446,336) (of record).

Gleixner discloses a discharge lamp comprising an outer tube (Figure 1, element 1) having a closed portion at a first end and a base portion (2) at a second end, a discharge tube (4) inside of which an electrode is provided (5), the discharge tube located in the outer tube, a sleeve (8) enveloping the discharge tube and located in the outer tube, the closed portion side of the outer tube provided with a support for supporting an end of the sleeve, the support comprising a column portion (11b) having a

narrow plate shape separated from the open portion of the closed portion side of the sleeve, and a sleeve holding portion (12) provided at an end of the column portion that is in contact with the sleeve, where the support is connected to a feeding body (6) connected to the electrode and led from the discharge tube toward the side of the closed portion (column 4, lines 4-7), and connected to an electric power supply wire (9b) extending toward the side of the base. The electric supply wire, referred to in the specification as a "metallic connector element" (column 3, line 65), functions as a power supply wire, as it extends from the lamp mount (3) and is the only structure connecting the feeding bodies to the electric supply area of the lamp.

Gleixner lacks disclosure of a column portion and a sleeve holding portion being formed of one continuous body, disclosing instead a column portion welded to a sleeve holding portion.

However, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify Gleixner's lamp to have a column portion and a sleeve holding portion being formed of one continuous body, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

Regarding claim 2, the column portion (11b) is provided in the vicinity of the closed portion of the outer tube, which is opposite the base portion (2).

Regarding claim 3, the column portion (11b) has a shape along the internal shape of the closed portion of the outer tube. The column portion covers the sleeve holding portion (12), as can be seen in Figure 1, and the sleeve holding portion is shown to be circular in Figure 2a. Therefore both the column portion (11b) and the outer

tube are roughly circular when viewed from above, and the column portion has a shape along the internal shape of the outer tube.

Regarding claim 6, the support, which is a combination of elements 9b, 11b and 12 (column 3, line 65 – column 4, line 7) is provided with a protruding portion (9b) that is provided in the vicinity of the closed portion of the outer tube and protrudes from the column portion (11b), at which it is welded, as indicated by the black dot at the nexus of elements 9b and 11b.

Regarding claim 7, the sleeve holding portion has an L-shaped cross section, if taken from the perspective of a quarter of the cruciform shape of Figure 3b or can be seen to have a multitude of L-shaped cross sections if viewed from the perspective of the junctions between the steps (20a-20c) of Figure 2b.

Regarding claim 8, the sleeve holding portion is provided with concave grooves into which the end of the sleeve is fitted (column 6, lines 40-42).

Regarding claim 10, the sleeve holding portion is provided with a convex portion that is brought into point-contact with the sleeve (column 4, lines 48-52), where the steps 20a-20c of Figure 2b are taken to be convex portions, in that they bulge outward from the previous step.

Regarding claim 14, the discharge tube and the sleeve are arranged so that their central axes correspond to the central axis of the outer tube (column 4, lines 55-56 and Figure 1, line I-I and elements 1, 4 and 8).

Regarding claim 18, an end led from the discharge tube of one of the feeding bodies is connected to the support by welding (column 4, lines 5-7).

Regarding claim 19, an end led from the discharge tube of another one of the feeding bodies is connected to the base (2) by a metal wire (9a). The feeding body (6)

near the base is connected to the support (11a), as is shown by the black dot, and metal wire (9a) is welded to the support (11a), as is also shown by a black dot.

2. Claims 12, 13, 15 and 16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Gleixner et al. (5,446,336) (of record) in view of Scholz et al. (5,043,623) (of record).

Gleixner discloses a discharge lamp with all the limitations discussed above, including a discharge tube comprising a light-emitting portion where an electrode (5) is provided, and a thin tube portion (4a) which is provided at both ends of the discharge tube and in which a feeding body (6) connected to an electrode is sealed with a sealing material (7) inside the thin tube, but lacks disclosure of a rare gas and a light-emitting metal filled inside the discharge tube or of a gas in the outer tube.

It is well known in the art to provide a gas filling for a discharge tube and an outer tube to provide a functional lamp.

Regarding claim 12, Scholz teaches an outer tube filled with an inert gas (column 3, lines 56-57).

Regarding claim 13, Scholz teaches an inert gas filled to a pressure of 400 torr, which is greater than the claimed amount of  $1.33 \times 10^4$  Pa (column 3, line 57).

Regarding claim 15, Scholz teaches the use of a rare gas and a light-emitting metal in a discharge tube similarly-structured to Gleixner's (column 3, lines 65-67).

Regarding claim 16, the light-emitting metal Scholz teaches is a metal halide (column 3, line 62).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Gleixner's discharge lamp with the gas taught by Scholz for the outer tube and the discharge tube in order to provide a fully-function lamp.

3. Claim 17 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Gleixner et al. (5,446,336) (of record) in view of Geven et al. (5,424,609) (of record).

Gleixner discloses a discharge lamp with all the limitations discussed above but lacks explicit disclosure of the material used to form the feeding body.

It is well known in the art to provide discharge lamps with feeding bodies made of niobium or molybdenum.

Geven teaches the use of niobium to form a feeding body (Figure 1, element 52a). Niobium is permeable to hydrogen and oxygen (column 9, lines 7-9) and is used in order to allow those gases, which must be removed from the vessel after manufacture, to escape the vessel without a concomitant loss of the desired gas fill (column 5, lines 32-34).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Gleixner's lamp with a feeding body made of niobium, as taught by Geven, in order to allow unwanted gases to escape from the vessel without the loss of the required gases.

#### ***Allowable Subject Matter***

4. Claims 5, 9, 11 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for indicating allowability:

The Examiner notes that the Prior Art of Record, Gleixner et al. (5,446,336), discloses a discharge lamp comprising an outer tube, a discharge tube inside of which an electrode is provided, the discharge tube located in the outer tube, a sleeve enveloping the discharge tube and located in the outer tube, the closed portion side of the outer tube provided with a support for supporting an end of the sleeve, the support comprising a column portion having a narrow plate shape separated from the open portion of the closed portion side of the sleeve, and a sleeve holding portion provided at an end of the column portion that is in contact with the sleeve, where the support is connected to a feeding body connected to the electrode and led from the discharge tube toward the side of the closed portion, and connected to an electric power supply wire extending toward the side of the base, as discussed above.

Regarding claim 5, the claimed material is found to be allowable because the prior art of record fails to show or suggest a discharge lamp having a support structure with the claimed limitations where the ratio of the width of the column portion to the outer diameter of the outer tube fit within the claimed range. While Gleixner et al. (5,446,336) (of record) discloses the width of other support members and the inner diameter of the outer tube, which can be approximated to be the same as the outer diameter of the outer tube, he lacks a disclosure of the width of the column portion.

Regarding claim 9, the claimed material is found to be allowable because the prior art of record fails to show or suggest a discharge lamp having a support structure with the claimed limitations where an elastic body is disposed between the sleeve holding portion and the feeding body. Duffy et al. (5,594,294) discloses an elastic body (46) disposed between the sleeve holding portion of the support and lead wire (24) to



provide flexible security to the lamp in case of mechanical shock. Duffy lacks disclosure of an elastic body between the sleeve support and the feeding body.

Regarding claim 11, the claimed material is found to be allowable because the prior art of record fails to show or suggest a discharge lamp having a support structure with the claimed limitations wherein the feeding body is sandwiched between the closed portion of the outer tube and the column portion of the support.

Regarding claim 20, the claimed material is found to be allowable because the prior art of record fails to show or suggest a discharge lamp having a support structure with the claimed limitations where the column portion is less than 3 mm from the outer tube. Gleixner et al. (5,446,336) (of record) entirely lacks disclosure of the distance between the column portion and the outer tube, and no prior art with a structure similar to Gleixner's discloses the need for close proximity between the two elements.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection. The indicated allowability of the claim limitation that has been amended into claim 1, specifically that of the column portion and the sleeve holding portion being a continuous body, has been withdrawn in light of new consideration of the term "continuous" to be synonymous with the word "integral" and therefore within the ordinary skill of the art to make the column portion and the sleeve holding portion continuous.

### ***Conclusion***

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharlene Leurig whose telephone number is (703)305-4745. The examiner can normally be reached on Monday through Friday, 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703)305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7382 for regular communications and (703)308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Sharlene Leurig  
August 14, 2003



Joseph Williams  
J. Williams